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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,846	04/15/2004	John M. Nieminen	07508-055001	6867

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EXAMINER	
BHAT, ADITYA S	

ART UNIT	PAPER NUMBER
2863	

MAIL DATE	DELIVERY MODE
05/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/824,846	NIEMINEN ET AL.	
	Examiner	Art Unit	
	ADITYA S. BHAT	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 38-46* is/are pending in the application.

4a) Of the above claim(s) *38-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1-17 in the reply filed on 10 January 2008 is acknowledged.

Claims 38-46 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 110 January 2008.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Govari (EP 1 203 560 A2).

With regards to claim 1, Govari teaches a distortion compensation method comprising:

determining an undisturbed phase for at least one of a first position indication signal and a second position indication signal; (Page 3, paragraph 0020)

determining an undisturbed ratio that relates the amplitude of the first position indication signal at a first frequency to the amplitude of the second position indication signal at a second frequency; (Page 4, paragraph 0020-0021)

determining a disturbed amplitude and phase of the position indication signal; and adjusting a position indication based on the disturbed amplitude and phase, the undisturbed amplitude ratio, and the undisturbed phase. (Page 7, paragraph 0051-0053)

With regards to claim 2, Govari teaches calculating a relationship between the phases of the first position indication signal and the second position indication signal. (Page 6, paragraph 0046)

With regards to claim 3, Govari teaches determining a second undisturbed ratio that relates the amplitude of either of the first and the second position indication signals to the amplitude of a third position indication signal at a third frequency, (Page 6, paragraph 0046) and

adjusting a position indication is further based on the second undisturbed ratio. (Page 7, paragraph 0051-0053)

With regards to claim 4, Govari teaches the first frequency is a superior harmonic of the second position indication signal and the second frequency is a subordinate harmonic of the first position indication signal. (Page 6, paragraph 0046) The frequency corresponding to field H1 is considered to be the super harmonic and the subordinate is the frequency corresponding to field H2.

With regards to claim 5, Govari teaches the superior harmonic is the fundamental frequency. (Page 6, paragraph 0046) The frequency corresponding to H1.

With regards to claim 6, Govari teaches the subordinate harmonic is a third order harmonic. (Page 6, paragraph 0046) Frequency corresponding to H3.

With regards to claim 7, Govari teaches the first frequency is less than the second frequency. The frequencies of all the field generating coils will change depending on the location of the article that is introduced into the field. If it is introduced at a location closer to the first coil then the frequency of the disturbed field will be greater at that coil then at the second and third coils.

With regards to claim 8, Govari teaches generating a plurality of frequencies using a multiple frequency waveform. (Page 6, paragraph 0048)

With regards to claim 9, Govari teaches the multiple frequency waveform is a chirped waveform. (Page 6, paragraph 0047) This section teaches a amplitude, frequency and phase. From this we can conclude that the signal must be a chirped waveform.

With regards to claim 10, Govari teaches the selected first frequency and second frequency are harmonically related. (see claim 4)

With regards to claim 11, Govari teaches the distortion compensation method is repeated for a plurality of position indication signals. (page 3, paragraph 0043-0046)

With regards to claim 12, Govari teaches detecting the presence of an eddy current in a conductive object. (Page 3, paragraph 0013)

With regards to claim 13, Govari teaches detecting the presence of an eddy current includes monitoring a ratio of the amplitude of the first position indication signal and the amplitude of the second position indication signal. (page 6, paragraph 0049)

With regards to claim 14, Govari teaches detecting the presence of an eddy current includes detecting a change in the undisturbed phase. (Page 3, paragraph 0011-0013)

With regards to claim 15, Govari teaches wherein determining the undisturbed phase includes measuring asymptotic phase values and using the asymptotic phase values to calculate the undisturbed phase. (page 7, paragraph 0051)

With regards to claim 16, Govari teaches determining the undisturbed phase includes iteratively calculating phase values and adjusting an asymptotic phase value, the asymptotic phase value used to calculate the undisturbed phase. (Page 3-4 paragraphs 0020-0021)

With regards to claim 17, Govari teaches receiving from a sensor the real components of the first and second position indication signals. (page 7, paragraph 0052) It is unclear how the sensor would detect an imaginary component of a signal. Imaginary components maybe used in calculations but it is unclear how they maybe sensed using a sensor.

Response to Arguments

Applicant's arguments filed 3/30/07 have been fully considered but they are not persuasive. In this instance applicant argues that the Govari reference only teaches calculating a disturbed amplitude ratio. In order to calculate the ratio for the disturbed field one must know the ratio for the undisturbed field as the disturbance is relative to a field that is undisturbed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ashe (USPN 6,172,499) teaches a eddy current error-reduced AC magnetic position measurement system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S. Bhat whose telephone number is 571-272-2270. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aditya Bhat/ May 5, 2008

Examiner, Art Unit 2863